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RAW SEQUENCE LISTING

DATE: 12/06/2001

PATENT APPLICATION: US/09/847,539A

TIME: 16:23:11

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3 <110> APPLICANT: Bjorck, Lars H
4   Rassmussen, Magnus
7 <120> TITLE OF INVENTION: STREPTOCOCCAL ALPHA ZM BINDING PROTEIN
9 <130> FILE REFERENCE: 100084.415US / N.75312B
11 <140> CURRENT APPLICATION NUMBER: US 09/847,539A
12 <141> CURRENT FILING DATE: 2001-05-01
14 <160> NUMBER OF SEQ ID NOS: 30
16 <170> SOFTWARE: PatentIn Ver. 2.1
18 <210> SEQ ID NO: 1
19 <211> LENGTH: 23
20 <212> TYPE: PRT
21 <213> ORGANISM: Streptococcus pyogenes
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39 Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg Asn
40           20           25           30
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65 <211> LENGTH: 184
66 <212> TYPE: PRT
67 <213> ORGANISM: Streptococcus pyogenes
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73 Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg Asn

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74          20          25          30
76 Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile Glu Asp Lys
77          35          40          45
79 Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala Leu Glu Ala
80          50          55          60
82 Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val
83 65          70          75          80
85 Lys Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp Gln
86          85          90          95
88 Thr Asp Ala Leu Gln Ser Glu Glu Ala Glu Val Val Gln Ser Asp Asn
89          100          105          110
91 Ala Ala Ser Asp Ala Trp Glu Lys Ala Ala Thr Pro Ile Ala Leu Asp
92          115          120          125
94 Val Lys Lys Thr Lys Asp Thr Lys Pro Val Val Lys Lys Glu Glu Arg
95          130          135          140
97 Gln Asn Val Asn Thr Leu Pro Thr Thr Gly Glu Glu Ser Asn Pro Phe
98 145          150          155          160
100 Phe Thr Ala Ala Ala Leu Ala Ile Met Val Ser Thr Gly Val Leu Val
101          165          170          175
103 Val Ser Ser Lys Cys Lys Glu Asn
104          180
108 <210> SEQ ID NO: 5
109 <211> LENGTH: 141
110 <212> TYPE: PRT
111 <213> ORGANISM: Streptococcus pyogenes
113 <400> SEQUENCE: 5
114 Val Asp Ser Pro Ile Glu Gln Pro Arg Ile Ile Pro Asn Gly Gly Thr
115 1          5          10          15
117 Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg Asn
118          20          25          30
120 Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile Glu Asp Lys
121          35          40          45
123 Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala Leu Glu Ala
124          50          55          60
126 Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val
127 65          70          75          80
129 Lys Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp Gln
130          85          90          95
132 Thr Asp Ala Leu Gln Ser Glu Glu Ala Glu Val Val Gln Ser Asp Asn
133          100          105          110
135 Ala Ala Ser Asp Ala Trp Glu Lys Ala Ala Thr Pro Ile Ala Leu Asp
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145 <212> TYPE: PRT
146 <213> ORGANISM: Streptococcus pyogenes
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149 Val Asp Ser Pro Ile Glu Gln Pro Arg Ile Ile Pro Asn Gly Gly Thr
150   1           5           10           15
152 Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg Asn
153           20           25           30
155 Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile Glu Asp Lys
156           35           40           45
158 Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala Leu Glu Ala
159           50           55           60
161 Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val
162   65           70           75           80
164 Lys Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp Gln
165           85           90           95
167 Thr Asp Ala Leu Gln Ser Glu Glu Ala Glu Val Val Gln Ser Asp Asn
168           100          105          110
170 Ala Ala Ser Asp Ala Trp Glu Lys Ala Ala Thr Pro Ile Ala Leu Asp
171           115          120          125
173 Val Lys Lys Thr Lys Asp Thr Lys Pro Val Val Lys Lys Glu Glu Arg
174           130          135          140
176 Gln Asn Val Asn Thr Leu Pro Thr Thr Gly Glu Glu Ser Asn Pro
177 145           150          155
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181 <211> LENGTH: 217
182 <212> TYPE: PRT
183 <213> ORGANISM: Streptococcus pyogenes
185 <400> SEQUENCE: 7
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189 Gly Leu Val Ala Val Ser Ala Ser Val Leu Val Gly Ser Thr Val Ser
190           20           25           30
192 Ala Val Asp Ser Pro Ile Glu Gln Pro Arg Ile Ile Pro Asn Gly Gly
193           35           40           45
195 Thr Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg
196           50           55           60
198 Asn Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile Glu Asp
199   65           70           75           80
201 Lys Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala Leu Glu
202           85           90           95
204 Ala Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val
205           100          105          110
207 Val Lys Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp
208           115          120          125
210 Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Glu Val Val Gln Ser Asp
211           130          135          140
213 Asn Ala Ala Ser Asp Ala Trp Glu Lys Ala Ala Thr Pro Ile Ala Leu
214 145           150          155          160
216 Asp Val Lys Lys Thr Lys Asp Thr Lys Pro Val Val Lys Lys Glu Glu
217           165          170          175
219 Arg Gln Asn Val Asn Thr Leu Pro Thr Thr Gly Glu Glu Ser Asn Pro
220           180          185          190

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222 Phe Phe Thr Ala Ala Ala Leu Ala Ile Met Val Ser Thr Gly Val Leu
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226      210      215
229 <210> SEQ ID NO: 8
230 <211> LENGTH: 259
231 <212> TYPE: PRT
232 <213> ORGANISM: Streptococcus pyogenes
234 <400> SEQUENCE: 8
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236   1      5      10      15
238 Thr Val Ser Ala Val Asp Ser Pro Ile Glu Gln Pro Arg Ile Ile Pro
239      20      25      30
241 Asn Gly Gly Thr Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu
242      35      40      45
244 Ala Leu Arg Asn Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala
245      50      55      60
247 Ile Glu Asp Lys Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp
248   65      70      75      80
250 Ala Leu Glu Ala Leu Ala Asp Gln Ala Asp Ala Leu Gln Ser Glu Glu
251      85      90      95
253 Ala Ala Val Val Gln Ser Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala
254      100     105     110
256 Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val
257      115     120     125
259 Lys Ala Asp Asn Ala Ala Ser Asp Thr Leu Glu Ala Leu Ala Asp Gln
260      130     135     140
262 Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val Lys Ala Asp Asn
263 145      150     155     160
265 Ala Ala Ser Asp Thr Leu Glu Ala Leu Ala Asp Gln Thr Asp Ala Leu
266      165     170     175
268 Gln Ser Glu Glu Ala Ala Val Val Lys Ala Asp Asn Ala Ala Ser Asp
269      180     185     190
271 Thr Leu Glu Ala Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu
272      195     200     205
274 Ala Glu Val Val Gln Ser Asp Asn Ala Ala Ser Asp Ala Trp Gly Lys
275      210     215     220
277 Ala Ala Thr Pro Ile Ala Leu Asp Val Lys Lys Thr Lys Asp Thr Lys
278 225      230     235     240
280 Pro Val Val Lys Lys Glu Glu Arg Gln Asn Val Asn Thr Leu Pro Thr
281      245     250     255
283 Thr Gly Glu
288 <210> SEQ ID NO: 9
289 <211> LENGTH: 155
290 <212> TYPE: PRT
291 <213> ORGANISM: Streptococcus pyogenes
293 <400> SEQUENCE: 9
294 Asp Ser Pro Ile Glu Gln Pro Arg Ile Ile Pro Asn Gly Gly Thr Leu
295   1      5      10      15

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297 Ile Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala Leu Arg Asn Glu
298           20           25           30
300 Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile Glu Asp Lys Glu
301           35           40           45
303 Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala Leu Glu Ala Leu
304           50           55           60
307 Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val Lys
308 65           70           75           80
310 Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp Gln Thr
311           85           90           95
313 Asp Ala Leu Gln Ser Glu Glu Ala Glu Val Val Gln Ser Asp Asn Ala
314           100          105          110
316 Ala Ser Asp Ala Trp Glu Lys Ala Ala Thr Pro Ile Ala Leu Asp Val
317           115          120          125
319 Lys Lys Thr Lys Asp Thr Lys Pro Val Val Lys Lys Glu Glu Arg Gln
320           130          135          140
322 Asn Val Asn Thr Leu Pro Thr Thr Gly Glu Glu
323 145           150           155
327 <210> SEQ ID NO: 10
328 <211> LENGTH: 271
329 <212> TYPE: PRT
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332 <400> SEQUENCE: 10
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336 Gly Gly Thr Leu Thr Asn Leu Leu Gly Asn Ala Pro Glu Lys Leu Ala
337           20           25           30
339 Leu Arg Asn Glu Glu Arg Ala Ile Asp Glu Leu Lys Lys Gln Ala Ile
340           35           40           45
342 Glu Asp Lys Glu Ala Thr Thr Ala Ile Glu Ala Ala Ser Ser Asp Ala
343           50           55           60
345 Leu Glu Ala Leu Ala Asp Gln Ala Asp Ala Leu Gln Ser Glu Glu Ala
346 65           70           75           80
348 Ala Val Val Gln Ser Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu
349           85           90           95
351 Ala Asp Gln Ala Asp Ala Leu Gln Ser Glu Glu Ala Ala Val Val Gln
352           100          105          110
354 Ser Asp Asn Ala Ala Gly Asp Ala Leu Glu Ala Leu Ala Asp Gln Thr
355           115          120          125
358 Asp Ala Leu Gln Ser Glu Glu Ala Ser Val Val Lys Ala Asp Asn Ala
359           130          135          140
361 Ala Ser Asp Ala Leu Glu Ala Leu Ala Asp Gln Thr Asp Ala Leu Gln
362 145           150          155          160
364 Ser Glu Glu Ala Ser Val Val Lys Ala Asp Asn Ala Ala Ser Asp Ala
365           165          170          175
367 Leu Glu Ala Leu Ala Asp Gln Thr Asp Ala Leu Gln Ser Glu Glu Ala
368           180          185          190
370 Ala Val Val Lys Ala Asp Asn Ala Ala Ser Asp Ala Leu Glu Ala Leu
371           195          200          205

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VERIFICATION SUMMARY

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